




- 1) Art of Drawing
- 2) Artist's Assistant in
Drawing
- 3) Painter's Compositions
- 4) Art of Painting
- 5) Art of Painting in Oil
- 6) Anatomical Plates
(Engraved)
- 7) The Class Principles of Design
various dates (1805-1826)



Digitized by the Internet Archive
in 2017 with funding from
Getty Research Institute



THE

ARTIST'S ASSISTANT

IN

Drawing,

PERSPECTIVE, ETCHING IN COPPER
AND STEEL, ENGRAVING,

METZOTINTO SCRAPING,

PAINTING ON GLASS, IN CRAYONS, IN WATER-
COLOURS, AND ON SILKS AND SATINS.

CONTAINING THE

EASIEST AND MOST COMPREHENSIVE RULES FOR THE ATTAIN-
MENT OF THOSE TRULY USEFUL AND POLITE ARTS.

METHODICALLY DIGESTED,

And adapted to the Capacities of

YOUNG BEGINNERS.

ILLUSTRATED WITH

SUITABLE EXAMPLES, ENGRAVED ON COPPER.

THE THIRTEENTH EDITION, IMPROVED.

London :

PRINTED FOR R. H. LAURIE,
MAP, CHART, AND PRINT, SELLER,

NO. 53, FLEET STREET.

1825.

PREFACE.

IT has ever been the misfortune of those who have professed to lay down rules for the attainment of any art or science, to leave them enveloped with difficulties, which, if not utterly insuperable, at least discourage the learner from proceeding in a study which he can have little hopes will ever reward his pursuit.

From hence we may reasonably infer, that the said professors were totally unacquainted, if not with the theory, at least with the practical part, of what they undertook to teach others, and that the instructions they have given were founded rather upon a bare supposition of their efficacy, than upon the surer basis of long and repeated experience, which alone could have ensured their success, and from which, with all due deference to the judicious, (whose sanction we shall at all times be ambitious to deserve,) we may venture to answer for the practicability of our own.

To obviate every objection, and to remove all those difficulties which had so long blocked up the path of science, and retarded, if not wholly impeded, the pupil in his progress to the Temple of Fame, was the chief view in compiling the subsequent little Treatise.

Over and above the improvements made in illustrating the several arts hitherto so imperfectly and unintelligibly explained, we have introduced Directions for *Scraping* in *Metzotinto*, which, in this edition, are still further enlarged, and which, as they have never been before attempted in any books of this kind, we flatter ourselves will be more acceptable; especially when it shall appear from the rules laid down for the performance of this art, that it is so easy to be obtained, that a tolerable proficiency in *Drawing* will enable any one to undertake it with all imaginary prospect of success.

The reader will also find, in this impression, the addition of a very useful problem, in the article of *Perspective*, illustrated by a new plate.

As this book is intended chiefly for the use of young practitioners, we have purposely avoided all abstruse expressions and obsolete terms, contenting ourselves with such a familiar style as we judged most likely to inform those minds which we would wish to improve: yet, as the ideas of an artist are not wholly to be conveyed without some necessary terms peculiar to each branch, we have taken care to explain such as could not be omitted without a manifest injury to the work, by familiar words of a synonymous tendency, wherever they occur; so that we apprehend we have not left the least stumbling-block for the reader to encounter.

CONTENTS.

CHAP. I.

	PAGE
OF DRAWING	7
General Rules for Drawing	8
Of Copying of Draughts	9
Of Enlarging and Contracting	10
Of Imitation of Life	10
Of Drapery	11
Of Landscape	12
Of Light and Shade	13
Of History	14

CHAP. II.

OF PERSPECTIVE	15
Explanation of the Terms used in Perspective	15
To raise a Perpendicular	17
Another Way	17
To draw a Parallel Line	18
To divide a given Line into two equal Parts	18
To raise a Perpendicular at the End of a Line	18
To turn a Circle through three given Points	18
To draw an Oval	19
Another Method for an Oval	19
To draw a square Pavement	19
To find the Proportion of Objects above the Horizon	20
The same exemplified in Objects below the Horizon	21
To draw a direct View	21
To draw an oblique View	23
To draw a View with accidental Points	23
To find the Centre for the Roof of a House	24

CHAP. III.

OF ETCHING ON COPPER and STEEL	24
Directions for laying the Ground	25
Directions for Tracing	25
Directions for Etching	26
Of Biting, or eating-in the Work	26
Mr. Turrell's Menstruum, for Etching Steel Plates	28

CHAP. IV.

	PAGE
Of ENGRAVING.....	29
Of whetting and tempering the Graver	29
Of holding the Graver	30
Directions for Engraving..	30

CHAP. V.

Of METZOTINTO SCRAPING	32
Directions for laying the Metzotinto Ground	32
Directions for whetting the Grounding-Tool	33
Directions for scraping the Plate	33

CHAP. VI.

Of PAINTING upon GLASS	34
Colours proper for painting upon Glass	35
Method of using the Colours	37

CHAP. VII.

Of PAINTING in CRAYONS	38
Directions for using them	38

CHAP. VIII.

Of PAINTING in WATER-COLOURS	39
Names of the simple Colours	39
Directions for mixing Colours	40
Directions for using them	42
To make Gum-Water	44
Another Way	44
To keep the Flies from your Work	45
To make Liquid Gold	45
To make Liquid Silver	45
To make the Glare of Eggs	45
To recover Liquid Silver from Rust	45
To keep the Colours from sinking	45
To make Size for Candle-Light Pieces	46
To recover Colours when decayed	46
Pink	46

CHAP. IX.

Of PAINTING on SILKS, SATINS, &c.	47
Method of discharging Stains from Engravings ...	48

THE
ARTIST'S ASSISTANT.

CHAPTER I.

OF DRAWING.

DRAWING is the art of representing by outlines and shadows the various productions of nature and art, and of enlarging and contracting objects in the most exact proportion.

This art recalls to our memory things long since past, and rescues from oblivion the deeds of our illustrious ancestors, at the same time that it revives their image in our mind, by preserving their features for many generations. In a word, it may be said to be the silent, but most expressive, language of nature, which speaks to the eye, is understood by all nations, and conveys an idea where even words themselves would prove deficient.

After giving some general directions for the attainment of this truly polite and rational amusement, which is the basis on which all the rest of the arts depend, we shall consider it more particularly under the following heads, and lay down the most copious and intelligible rules for each respectively, viz.

<i>Copying of Draughts,</i>	<i>Landscape,</i>
<i>Enlarging and Contracting,</i>	<i>Light and Shadow,</i>
<i>Imitation of Life,</i>	<i>History.</i>
<i>Drapery,</i>	

The implements necessary for drawing are—a ruler, compasses, charcoal, a black-lead pencil, penknife, porte-

crayons, black, white, and red, chalk, crayons, Indian ink, crow-quill pens, camel's-hair pencils, fitches, paper of several sorts, and porte-folios.

GENERAL RULES FOR DRAWING.

THE first thing to be observed is the choice of proper originals: and here we would recommend *Le Clerc's* principles of drawing as the easiest and best calculated for the instruction of beginners. This may be had, price 2s. 6d. at the publisher's of this work.

Having provided this, begin with the outlines of the several features, as the eyes, nose, mouth, ears, &c. as they occur in the book. Practise these often over, till you are quite master of them; then proceed to a profile or side-face, after that to an oval or full face; always remembering that each of these must be perfectly attained before you venture to proceed farther.

When you can copy a face correctly, the next thing is, to draw the several limbs or parts of the body, as the hands, arms, feet, legs, &c., then go on to the body itself; which having done, you will be able to undertake a whole figure, observing carefully the exact proportions and bearings of one part with respect to the other.

The learner ought to be particularly cautious that he does not attempt a whole figure before he has made himself master of the several parts: for this is beginning the work at the wrong end, and is, indeed, the same thing as if a man should attempt to climb to the top of a house without the help of the stairs.

As for beasts, birds, fruit, plants, &c., we deem it useless to give directions for drawing them, as it is well known, that he who has so far improved his ideas as to be able to draw a human figure correctly, will find it no difficulty to perform every other branch of this art.

Sketch or draw all your outlines faintly, with a piece of soft charcoal (which may be known by the pith in the middle) cut to a point like a pencil; and when you see

any thing amiss, whisk it out with a handkerchief or feather; correct your errors with a black-lead pencil, and compare your work with the original, till every part of them perfectly correspond. This done, finish your outlines with black-lead or Indian ink. This advice, properly attended to, will save you an infinite deal of trouble, in drawing over and over again, to your no small discouragement.

If you prefer Indian ink, rub it with water upon a marble, and with a crow-quill pen perfect your outlines; then rub out the marks of the pencils with bread, or Indian rubber. Keep three or four different shades of ink in the hollows of your stone, to distinguish your distances, reserving one of the holes for water.

When you are thoroughly versed in the outlines, your next business will be to learn to shadow: but of this hereafter, under the articles of *light and shade*.

Be not too hasty at first setting out, which will but impede your progress, and hinder your improvement; whereas, by bestowing a little more time, you will attain perfection sooner than you can well imagine, and expedition will come of itself as you become more experienced.

OF COPYING DRAUGHTS.

WHEN you would copy a print or drawing exactly of the same size, rub the back of it with the dust of red chalk or black lead; lay this upon your paper, and pin it down at the four corners; then with a blunt point trace the outlines and breadths of the shadows; which done, having carefully examined it, to see that nothing be omitted, take it off, and finish it with a pencil or pen.

Another way to make an exact copy, and at the same time to preserve the original, is to lay a piece of transparent paper upon it, and draw the outlines thereon with a black-lead pencil; then, between that and the paper you intend to draw upon, place a piece of thin

post paper, reddened or blackened at the back; after which, proceed to trace and finish it according to the foregoing rule.

If you would reverse your original, you need only turn the transparent paper, with the drawing you have made upon it, downwards, upon the post-paper, and trace it as above directed.

OF ENLARGING AND CONTRACTING.

DIVIDE your original with a pair of compasses into any number of squares, and rule them across with a black-lead pencil from side to side, and from top to bottom.

Then, having your paper of the size you intend, divide it into the same number of squares, either bigger or less, as you would enlarge or contract it.

Place your original before you, and draw, square by square, the several parts; observing to make the part you are drawing fall into the same part of the square as it does in your original. To prevent mistakes, number the squares both of the original and copy, as in Fig. I. and II. of the Drawing-plate, at the end of this work.

Then outline it with Indian ink, rub out the marks of the pencil with bread, or Indian rubber, and shade it at pleasure.

OF IMITATION OF LIFE.

LET the person you draw after be of a proportionable size, and well shaped; place him in the easiest and most natural attitude, and sketch faintly with your charcoal the head, or any of the limbs, separately; which having carefully done, proceed to finish with your pencil.

When you have sufficiently practised the several parts or limbs, you may draw the whole figure, in whatever attitude you think proper to place it; beginning with the

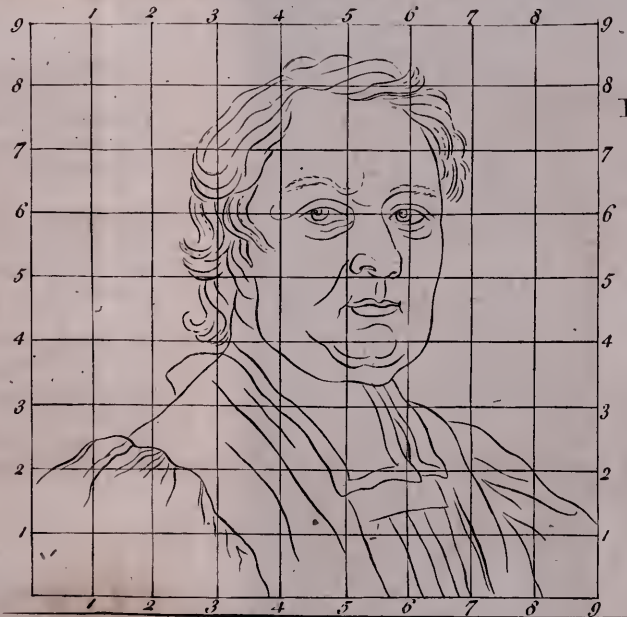


Fig. I.

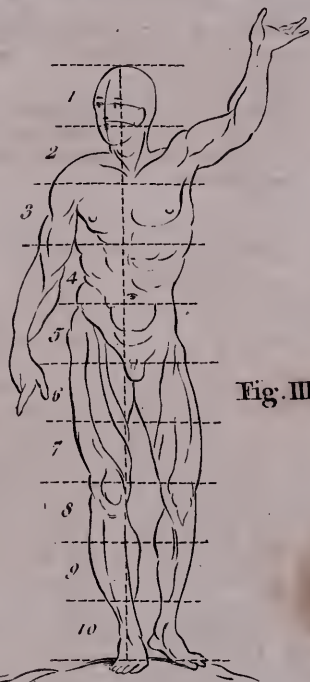


Fig. III.

Fig. II.





easiest, and proceeding by degrees to the more difficult postures, as time and experience shall enable you.

Be sure to finish your outlines so correctly, (marking all the muscles as they occur,) that, even before you give it any shadow, it may have some resemblance of the person.

The true proportion which one part of a human figure bears to another, may be seen in Fig III. which will serve as a standard to examine your drawing by; except where the figure is to be fore-shortened, in which case, nature will be the best guide.

In drawing a likeness, care must be taken to express the passions in the most lively manner; which is to be done by observing the peculiar cast and disposition of every feature with the exactest nicety: and as this is, of all the parts of drawing, by far the most difficult, it will require a more than ordinary attention, and should be last attempted.

OF DRAPERY.

DRAPERY is the art of clothing your figures with elegance and propriety.

When your naked figure is outlined, first draw the outlines of the drapery lightly, then the greater folds, and afterwards the lesser, observing never to let them cross each other.

Particular regard is to be had to the quality of the drapery; as the folds of stuff or woollen cloth are more abrupt and harsh, and those of silk more flowing and easy. Linen, cambric, gauze, &c., as their substance is lighter than either, require a still greater delicacy in expressing the waving of the folds, by the faintness of their shadows.

The drapery should not stick too close to the body, but must seem to flow round, as it were; yet in such a manner, that the motion of the figure may be free and easy. A great lightness and motion of the drapery should only be used when the figures are supposed to

be in much agitation, or exposed to the wind; but, in a calm place, and free from violent action, their drapery should be large and flowing, in order to give them a more graceful appearance.

Let the loose parts of the drapery, blown by the wind, all flow one way; and draw that part which lies closest to the body, before you draw those which fly off.

Suit your garments to the body, and make them bend with it; the closer the garment sticks to the body, the narrower and smaller must be the folds; and if it sits quite close, there will be no folds at all, but must only have a faint shadow, to represent the part of the body which lies under it.

By observing diligently in what manner the drapery flows upon any person standing or sitting before you for that purpose, you will see in what manner to dispose your folds and shadows, according to the unerring rule of nature.

OF LANDSCAPE.

LANDSCAPE represents the face of the country as it appears to our view, with all the various objects analogous thereto; as towns, castles, churches, houses, trees, hills, cattle, rivers, rocks, ruins, &c.

Be careful to augment or lessen every object according to its distance, making the most remote objects fainter and less distinct, as they appear to the eye, and enlarging them proportionably as they advance nearer.

Shew the sky cloudy, or clear, as occasion requires; and if you introduce the sun, let it be rising or setting; either of which representations will give an additional grace to your picture, as they represent nature in its liveliest and most agreeable appearance.

Adapt every part of your landscape to the season of the year, and the time of the day, you intend it to represent; and dispose your lights and shades with consistent propriety.

Lastly, we would recommend it to practitioners in this noble art, to rise early in a fine morning, that they may have a better idea of the harmony and beauty of the works of the great Creator; which would wonderfully replenish their minds as to colour and effect.

OF LIGHT AND SHADE.

THE true distribution of light and shade in a picture is absolutely necessary to be known; as it not only determines the proper distance of one object from another, without which the whole would be an undistinguishable mass of confusion; but it gives likewise to each respective object its substance, roundness, and effect.

Shadowing is performed with the pen or pencil; in either of which great judgment is required.

Having made your outlines correct, the first thing is to observe from which side of the original the light comes in; which, if natural, is either from the right hand or left; for, whenever the light appears in the middle of a picture, and seems to glare more than ordinary, it is caused by a candle, a lamp, or some other luminous body, and is called an artificial light.

Lay on your little tints first, disposing them as you see they are done in the original: and then proceed to the deeper ones, till you come to the darkest parts of all: for you may at any time darken your shadows, when you cannot lighten them.

Let all your shadows in the same piece fall on the same side: that is, if the right side of a man's face be dark, so must be the right side of his body, arm, leg, thigh, &c. But if the light side be darkened by the opposition of some other body intercepting the light, it must receive a contrary shadow.

Make your shadows fainter as they grow towards the light, breaking them gradually, that they may not appear too sudden or harsh.

If you shade with black lead or with crayons, you may blend your shadows, and soften them one into

another as you require, with a stump made of paper or glove leather, rolled and tied hard, and cut almost to a point, with which you may also weaken your shades where they are too strong.

When one part of the body projects over or before another, the part projecting must receive a stronger light; those parts that bend inward must be made so much the darker, and shadowed deeper next the light.

Two equal lights must never be made in the same picture: the strongest light should fall upon the middle of the piece, (where the principal figure ought to stand,) diminishing gradually towards the extremities.

By frequently examining into nature, you will have an opportunity of improving your ideas of light and shade, and will be able to form a proper judgment of the effect which the different rays or degrees of light will produce in a picture; for which reason you should never let slip an opportunity of remarking the various appearances you meet with.

OF HISTORY.

THIS branch of drawing presents to our view things past, present, and future.

An historical picture must describe the transaction represented, in a manner so clear and conspicuous, as to convey an idea of it to our minds, as fully as could be done by a verbal description: and care must be taken to preserve such an analogy or connection between the figures, that not one may seem to be introduced but for some end or purpose. And as, in dramatic writing, it is essential to make every person *speak* consistently with the part he represents, so here it will be equally necessary to observe the same propriety of character, and make every figure *look* the sentiment it is intended to express.

PERSPECTIVE PLATE.

Fig. XIV.

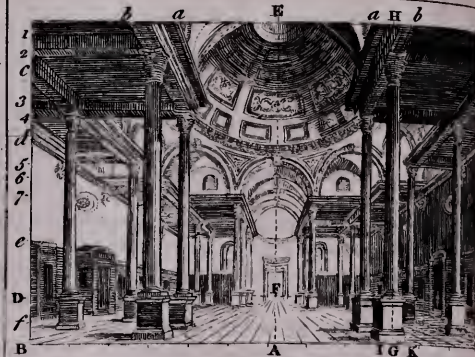


Fig. XV.

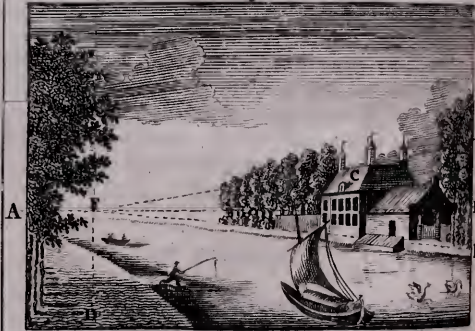


Fig. XVI.



Fig. XII.

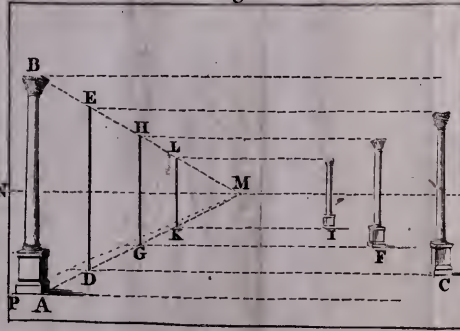


Fig. XIII.

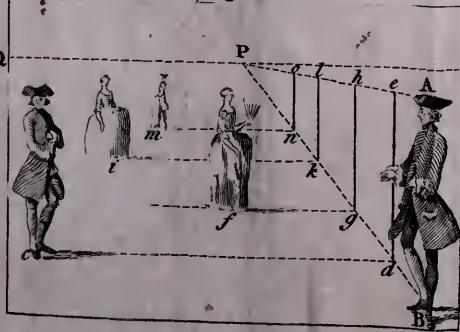


Fig. X.

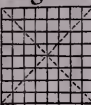


Fig. XI.

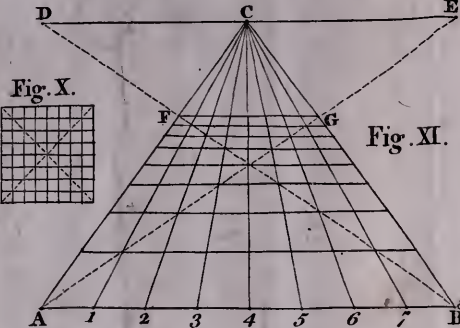


Fig. II.

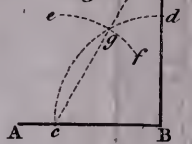


Fig. V.

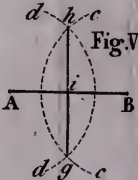


Fig. IV.

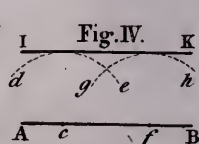


Fig. III.

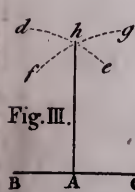


Fig. VI.

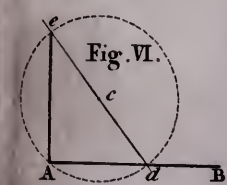


Fig. VII.

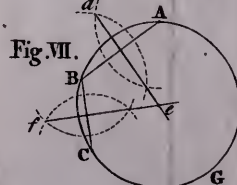


Fig. VIII.

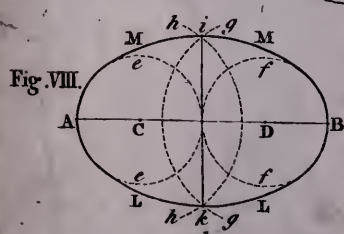
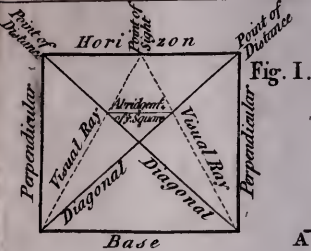
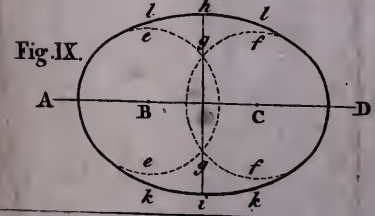


Fig. IX.



CHAP. II.

OF PERSPECTIVE.

PERSPECTIVE is the art of delineating objects (as they appear in nature upon a plain surface) according to their distance and height, perpendicular to the horizon between the object and the eye.

This art is of great consequence to those who would excel in drawing, etching, engraving, carving, in bas-relief, or painting; for being well-understood, the artist will be enabled to know when to adhere to the strict rules, and when to depart from them with propriety.

EXPLANATION OF THE TERMS USED IN PERSPECTIVE.

1. The *Base* or *Fundamental Line*, is the bottom line of the drawing, on which the person is supposed to stand, with his face towards the point of sight.

2. A *Perpendicular* is a line drawn upright with respect to any part of the base.

3. *Parallel Lines* are lines equidistant from each other, as the horizon to the base.

4. The *Horizon* is the most distant part of a plain, where the clouds, seeming to touch the earth, limit the sight. The horizontal line gives the height of the eye; for we cannot see any thing above the horizon which does not exceed this height: yet the summit of a mountain may be above the horizon, though its foot be far beneath it.

5. The *Point of Sight* is that part of the horizontal line where all the visual rays centre in a point.

6. *Visual Rays* are beams of light, conveying the likeness of any object to the eye or sight, and the knowledge thereof to the mind or understanding.

7. The *Points of Distance* are supposed points set off on the horizontal line, at equal distances on each side of the point of sight.

8. *Diagonal Lines* are those drawn from the points of distance to the extremities of the base lines.

9. *Abridgment of the Square* is the line where the diagonals intersect or cross the visual rays, and must always run parallel to the base. It is made only where the sight is limited by a perpendicular, as the farther end of a church, hall, room, &c. And supposing a person to stand thereon, a parallel line drawn through the point of sight will seem to pass through the eyes, and will consequently shew what height that person ought to be.

The nine foregoing definitions are illustrated in Fig. I. of the perspective plate, at the end of this work.

10. *Point of direct View*. This is nothing more than the front view of a house, church, &c., or, in other words, a geometrical elevation raised from a plan or ground-plot, and comprehending an equal space on both sides of the point of sight. See Fig. XIV. at the end.

11. *Point of oblique View* is when we see the object sideways or aslant. Example: Suppose a person was to draw a view of a canal, with some remarkable building he is desirous to shew more distinct, he must place himself (for the base or fundamental line) opposite to that building, that the ray of light may be more oblique; by which means the admired building will be less foreshortened, and appear to greater advantage, the point of sight being still before him, though not in the middle of the picture. See Fig. XV.

12. *Accidental Points* are those where objects end in the horizontal line, but neither in the points of sight or distance, and serve for streets, houses, chairs, roads, &c., which take different directions. As for example: Suppose a street leading to the point of sight, and from it two others branch, the one on the right hand, the other on the left, and take a different direction; these two last streets make what we call *accidental points*, terminating in some part of the horizontal line, on each side of the point of sight. See Fig. XVI. The same is to be observed in a grove, park, &c., where the walk you

are in directs immediately to the point of sight, and the avenues branching out on either side, terminate also in different parts of the horizon.

Ichnography is the plan or ground-plot of any object that is to be raised in perspective.

Scenography is the art of bringing any thing raised in perspective from an ichnographic plan to its due proportion, according to the distance in which it is placed: that all objects may be diminished according to their distance in a picture, in the same degree as they are diminished by distance in a natural prospect. A scenographic view may be either direct, as in Fig. XIV, or oblique, as in Fig. XV.

As the art of perspective is constructed upon geometrical principles, it will be necessary, previous to the rules themselves, to learn the following introductory operations.

1. *From a Point in a given Line A B, to raise a Perpendicular.* See Fig. II.

Draw with the ruler the given line A B, then set one foot of your compasses in B, and extending them to rather more than half the length of the line A B, sweep the arch *c d*; and, with the same extent of compasses, set one point in *c*, and sweep the arch *e f*; then, without altering the compasses, set one foot in *g*, and describe the arch *h i*; next rule through the points *e g*, to intersect the arch *h i* and *k*, and draw the line from *k* to B, which is the perpendicular required.

2. *Another Way.* See Fig. III.

From the point A take the equal distances A B and A C on each side of it; then stretch the compasses to any distance greater than A B or A C, and with one foot of them in B sweep the arch *d e*; then, with the same extent of the compasses, set one point in C, sweep the arch *f g*; and these two arches will intersect each other in the point *h*, from which a line drawn to the point A is the perpendicular required.

3. *To draw one Line parallel, or equidistant, to another given Line, A B. See Fig. IV.*

Extend your compasses to the distance of the parallel you require; then, with one foot in any point of the given line, as in *c*, describe the arch *d e*. Again, without altering the compasses, fix one foot in any other point, as in *f*, and sweep the arch *g h*; then rule the line *I K*, touching the outward parts of the two arches, and that will be the parallel to the given line.

4. *To bisect or divide a given Line, A B, into two equal Parts. See Fig. V.*

Take with your compasses any distance greater than half the given line; then, with one foot of them in *B*, sweep the arch *c c*; and, with the same distance, setting one foot in *A*, sweep the arch *d d*; and these arches will intersect each other in the points *g h*; which, joined by a perpendicular, will intersect *A B* in the middle point *i*.

5. *Upon the End A of a given Line, A B, to raise a Perpendicular. See Fig. VI.*

Place one foot of the compasses in *A*, and extend them to any point *c* without the given line; then set one foot of them in *c*, and turn the circle *d e* and *A*, and through *d c* draw the diameter *d c e*, meeting the circle in *e*; join *A e*, and that right line is the perpendicular required.

6. *To turn the Circle through any three given Points not in a right Line. See Fig. VII.*

Fix three points to any distance you think proper, as at *A B* and *C*, and join them by the right lines *A B* and *B C*; then, by Fig. V., bisect the line *A B* with the line *d e*; which done, bisect the line *B C* with the line *f e*; and from the centre *e*, where these lines meet, extend your compasses to *A*, and describe the circle *A B C G*.

7. *To draw an Oval.* See Fig. VIII.

Draw a given line A B, which divide into four equal parts; set one foot of the compasses at C, and from that centre describe a circle *ee*; with the same extent of compasses place one foot in the centre D, and turn the circle *ff*; then, with one foot still in D, extend your compasses, and turn the arch *gg*; and with the same extent, placing one foot in C, describe the arch *hh*; join the intersections with a perpendicular from *i* to *k*; next, place one foot of the compasses in *i*, sweep the arch L L, and, without altering them, set one foot in *k*, and describe the arch M M.

8. *Another Method for an Oval.* See Fig. IX.

Draw a given line A D, and with the compasses extended, placing one foot in B, with the other turn the circle *ee*; then, without altering your compasses, on the line A D, in the supposed point C, sweep the circle *ff*, and through the points *gg*, where the two circles intersect, draw the perpendicular *hi*; then fix your compasses with one foot in *h*, and extend them so as to describe the arch *kk* to the lower extremities of the circles: then, with the same extent, with one foot in *i*, sweep the arch *ll*, to join the upper extremities.

By these examples it will appear, that an oval of any form or size may be constructed at pleasure, only taking care always to fix the compasses equidistant from the given line A D in the perpendicular *hi*.

PRACTICAL EXAMPLES IN PERSPECTIVE.

1. *To draw a square Pavement in Perspective.*

See Figs. X. and XI.

SUPPOSE your piece of pavement to consist of 64 pieces of marble, each a foot square. Your first business is, to draw an ichnographical plan or ground-plot of it, which is thus performed. Having made an exact

square of the size you intend your plan, divide the base and horizon into eight equal parts, and from every division in the base to its opposite point in the horizon, rule perpendicular lines; then divide the sides into the same number, ruling parallel lines across from point to point; so will your pavement be divided into 64 square feet; because the eight feet in length, multiplied by the same in breadth, give the number of square feet or pieces of marble contained in the whole; then rule diagonals from corner to corner; and thus will your ground-plot appear as in Fig. X.

Now, to lay this in perspective, draw another square to your intended size, and divide the base line A B into eight equal parts, as before: then fix your point of sight C, in the middle of the horizon D E, and from the same point rule lines in every division in the base A B; after which, rule diagonal lines from D to B, and from E to A, answerable to those in the ground-plot, and your square will be reduced to the triangle A B C; then from the point F, where the diagonal D B intersects the line A C, to the opposite intersection G, where the diagonal E A crosses the line C B, rule a parallel line, which is the abridgment of the square.

Then through the points where the diagonals cross the rest of the lines, which go from the base to the point of sight, rule parallel lines, and your square pavement will be laid in perspective, as in Fig. XI.

2 *To find the Height and Proportion of any Objects, as they appear above the Horizon, on a supposed Plane. See Fig. XII.*

First, Rule your horizontal line N O, and fix your point of sight, as at M; then mark the place of your nearest pillar, by making a dot for the base or bottom, as at A; and another for the summit or top, as at B: rule a line from A to the point of sight M, and another from B to M, and these two lines will give the height of any number of pillars. As for example: Suppose

you would have a pillar at C, fix your dot for the base, and rule from thence a parallel line to meet the diagonal A M at D; then rule the perpendicular D E to the diagonal B M: which perpendicular is the height of your figure required at C. Or, if you would place pillars at F and I, observe the same method, ruling the parallels F G and I K, and the perpendiculars G H and K L will give their heights at the distances required.

To find the diameter or thickness of pillars at any particular distances, you are also to be guided by that nearest the base. For instance: suppose your nearest pillar A B to be ten feet high, and one foot in diameter; divide it from top to bottom into ten equal parts, and set off one of them upon the base of the pillar: then rule a line from the point of sight M to the diameter P, and you will have the thickness of all your pillars on their respective parallels or bases.

3. *The same Rule exemplified in Objects below the Horizon.* See Fig. XIII.

If you would know the heights of a number of figures below the horizon, rule your horizontal line Q R, and fix your point of sight, as at P: then place your nearest figure, or mark the dots for the head and feet, by the points A and B, which answers the same purpose; and rule from these dots to the point of sight the lines A P and B P: and if you would find the height of a figure to be drawn at *c*, rule from thence the parallel *c d* to the diagonal B P, and the perpendicular *d e* will give the height required. The same directions will shew the height of a figure at any other distance you have a mind to place it, as at *f*, *i*, and *m*, by ruling the parallels *f g*, *i k*, and *m n*; and from each of these their respective perpendiculars *g h*, *k l*, and *n o*; which perpendiculars will shew the height of the figures at *f*, *i*, and *m*.

4. *To draw a direct View.* See Fig. XIV.

To illustrate this example, suppose you were to draw the inside of a church, as represented in this figure;

first, take your station at the point A, in the centre of the base line B C; from which you have a front view of the whole body of the church, with all the pillars, &c. on each side; then fix your horizon at any height you think proper, as at D E; bisect it by the perpendicular E A; and where these two lines intersect, is the point of sight F. (This perpendicular will pass through the centres of all the arches in the dome or cupola; which centres may be found by any three given points, as in Fig. VII.) Next divide your base line into any given number of feet; and the visual lines ruled from these divisions to the point of sight, will reduce all your objects to their just proportion, by setting off their height upon a perpendicular raised at their respective distances. The base, in the example here given, is divided into twelve equal parts, of five feet each; from which (supposing your front column be 35 feet high) take seven divisions from the base line of your drawing, and set them off upon the perpendicular G H; then (supposing this column to be five feet thick at the base) set off one of those divisions upon the parallel I K, which is the breadth required. So that, by proportioning this scale to any distance by the foregoing directions, you may not only find the dimensions of all your columns, but also of every distinct part of them, as well as of all the doors, windows, and other objects that occur. For instance:—Having found the height and breadth of your first or nearest column G, draw from the top and bottom of the said column, to the point of sight, the lines H F and K F; after which, rule the line I F from the base of the column to the point of sight, and you have the height and breadth of all the rest of the columns, as has been already shewn in Fig. XII.

By ruling lines from the points *a*, *b*, *c*, *d*, &c. to the point of sight, you will see that the summits and bases of your columns, doors, windows, &c. must tend immediately to that point; and by lines drawn from the points 1, 2, 3, 4, &c. on each side, to the correspondent points on the opposite side, may be seen all the parts of your building lying upon the same parallel.

5. *To draw an Oblique View.* See Fig. XV.

First, draw your horizontal line AB ; then, if your favourite object be on the right hand, as at C , place yourself on the left hand upon the base line, as at D ; then, from that station, erect a perpendicular DE , which will pass through the horizon at the point of sight F : to which rule the diagonals GF and HF , which will shew the roof and base of your principal building C , and will also, as before directed, serve as a standard for all the rest.

Observe, also, either in direct or oblique views, whether the prospect before you make a curve or not; for, if it does, you must be careful to make the same curve in your drawing.

6. *To draw a Perspective View, wherein are accidental Points.* See Fig. XVI.

Rule your horizontal line ab , and on one part of it fix your point of sight, as at c ; from which rule the diagonals cd and ce on the one side, and ef and cq on the other, which will shew the roofs and bases of all the houses in the street directly facing you; supposing yourself placed at A , in the centre of the base line: Then fix your accidental points g and h upon the horizontal line, and rule from them to the angles ik and lm , (where the streets on each side take a different direction towards the accidental points g and h), and the lines gi and gk give the roofs and bases of all the buildings on one side, as lh and mh do on the other.

Accidental points seldom intervene where the distance is small, as in noblemen's seats, groves, canals, &c., which may be drawn by the strict rules of perspective: but where the prospect is extensive and varied, including mountains, bridges, castles, rivers, precipices, woods, cities, &c., it will require such an infinite number of accidental points, that it will be better to do them as nature shall dictate, and your ripened judgment approve.

7. *To find the Centre for the Roof of a House, in an oblique View.* See Plate IV.

Suppose from the point of sight A, the visual lines B A and A C be drawn, B C being one perpendicular given, and D E the other; rule the diagonals from D to C, and from E to B; and the perpendicular F G, raised through the point of their intersection, will shew the true centre of the roof, as will appear by ruling the lines G E and G C.

From want of being acquainted with this necessary rule, many, who have been well versed in other parts of perspective, have spoiled the look of their picture, by drawing the roofs of their houses out of their true perpendicular.

CHAPTER III.

OF ETCHING.

ETCHING is a method of working on copper, wherein the lines or strokes, instead of being cut with a graver, are eaten in, or bitten, with aqua-fortis: likewise of working on steel, wherein similar lines or strokes are eaten in or bitten with the menstruum described hereafter.

This art, being executed with greater ease and freedom, than engraving, represents curious subjects better, and more agreeably to nature, as landscapes, ruins, and small, faint, or remote, objects, buildings, &c.

The principal materials for this art are, the copper-plate, hard and soft ground, (the first for summer, and the other for winter,) a dabber, turpentine-varnish, lamp-black, soft wax, and aqua-fortis.

The tools are, an oil-rubber, a burnisher, a scraper, a hand-vice, etching boards, etching needles, an oil-stone, and a parallel ruler.

The plate may be had of any size, and well polished, fit for use, of the coppersmiths in London.

DIRECTIONS FOR LAYING THE GROUND.

HAVING provided yourself with a plate of the size of the print or drawing you intend to copy, rub it well with an oil-rubber, made of swanskin flannel, till all the marks of the charcoal used in polishing it entirely disappear; then, wiping off the dirty oil with a linen rag, dip your finger in some clean oil, and touch it over every part of the plate; after which, with the burnisher, polish your plate till you can see your face in it; and in case any sand-holes or flaws appear, the scraper will assist you in taking them out. The marks left by the scraper are to be taken out by the burnisher till nothing appear. Having fixed your hand-vice at one end of the plate, with a rag and whiting clean the plate carefully from grease; then heat it over a charcoal fire, or lighted paper, till it will melt the ground, which is to be laid on thinly, and dabbed all over with the dabber, till it is perfectly smooth and even; then warm the plate again, and, holding it up with the ground downwards, smoke it all over with a wax candle, taking care that the snuff of it do not touch the ground, and waving the candle continually over every part, so that the ground may not be burnt by heating it more in one place than another. If the plate be large, you may bind four wax-tapers together.

DIRECTIONS FOR TRACING.

THE first thing to be done (while the plate is cooling, after the ground is laid) is to rub the back part of your print or drawing all over with a bit of rag or cotton, dipt in the scrapings of red chalk, and shake off the loose dust, or wipe it off gently with a clean rag. Place the red side upon the plate, making it fast at each corner with a little bit of soft wax. Lay your etching-board under your hand, to prevent bruising the ground; then with a blunt etching-needle trace lightly the outlines

and breadths of the shadows till the marks of them appear upon the ground, which you must take care not to penetrate by tracing too hard.

As great nicety is required in this part of your work, it will be necessary now and then to lift up one corner of your original, and examine whether every part be traced before you take it off, as it will be extremely difficult to lay it down again in its former position.

DIRECTIONS FOR ETCHING.

HAVING carefully traced your original, take it off, and lay a silk or linen handkerchief next the plate, and over that your etching-board: then proceed to the etching; for which, observe the following directions, which are adapted to every particular branch, as landscapes, shipping, portraits, history, architecture, &c.

Distances in landscapes, or the faint parts of any other picture, are the first to be done; and these are to be worked closer, and with a sharper pointed needle: The darker parts must be etched wider, and with a blunter needle; but to prevent mistakes, the needles may be marked according to their different degrees, and the uses for which they are intended. As for the very faintest parts of all, they are to be left for the graver, or dry needle: of which hereafter.

In buildings, and all architecture in general, use a parallel ruler, till frequent practice enables you to do them well enough without.

The needles may, when necessary, be whetted upon your oil-stone, keeping them turning in your hand, so as to whet them equally all round. The oil-stone will be further useful in whetting the scraper, which is to be rubbed flat upon the stone, and with a steady hand, keeping oil constantly upon the stone.

OF BITING, OR EATING-IN, THE WORK WITH AQUA-FORTIS.

FIRST examine your work carefully, to see that nothing be omitted; and if any scratches appear upon the

ground, or mistakes be committed in the etchings, they are to be stopped out, which is done by covering them with a mixture of lamp-black and varnish, laid on thinly with a hair-pencil, which, when dry, will resist the aqua-fortis. But it will be best to stop out these, as they occur to you in the course of your work; for by this means they will be less liable to escape your notice; and when the varnish is dry, you may etch it over again if required.

The next thing is, to inclose the work with a rim or border of soft green or other coloured wax, about half an inch high, bending the wax in the form of a spout, at one corner, to pour off the aqua-fortis; and that it may not run out at any other part, take care to lay your wax so close to the plate, that no vacancies be left.

Your aqua-fortis must be single; and if too strong, as will be seen in the biting, take it off, and mix it with a little water, shaking them together in a bottle; and when, by often using, it becomes too weak, it may be strengthened by mixing it in a bottle with a little double aqua-fortis. The bottle which contains the aqua-fortis should have a large mouth and a glass stopper.

Let the aqua-fortis lie on the plate a short time, wiping off the bubbles as they arise with a feather, which may remain upon the plate while it is biting; after which take it off, and wash the plate with water; then let it dry, and by scraping off part of the ground from the faintest part of the work, try if it be bit enough; and if not, stop out the part you have tried with the lamp-black and varnish, and, when that is dry, pour on the aqua-fortis again.

When the faint parts of your work are bit enough, stop them out, and proceed to bite the stronger parts, stopping them out as occasion requires, till the whole work is sufficiently bit; then warm the plate, and take off the soft wax: after which, heat the plate till the ground melts, pour on a little oil, and wipe the whole off with a rag. When the ground is taken off, rub the work well with the oil-rubber, and wipe the plate clean;

then proceed to finish it with the graver, according to the directions given in Chapter IV.

MR. TURRELL'S MENSTRUUM, *for ETCHING STEEL PLATES, is composed as follows:*

Take four parts, by measure, of the strongest pyroligneous acid, chymically called *Acetic Acid*, and one part of alcohol or highly rectified spirits of wine; mix these together, and agitate them gently for about half a minute; and then add one part of pure nitric acid; and, when the whole is thoroughly mixed, it is fit to be poured upon the steel plate. When the mixture is compounded in this proportion, very light tints will be sufficiently corroded in about one minute, or one minute and a half; and a considerable degree of colour will be produced in a about a quarter of an hour; but the effect may be produced much quicker, by the addition of more nitric acid, or it may be made to proceed slower, by omitting any convenient portion thereof. When the mixture is poured off the plate, it should be instantly washed with a compound, made by adding one part of alcohol to four of water, and the stopping varnish laid upon any part that is sufficiently corroded, should be thoroughly dry before the biting is repeated. Care should be taken to keep the mixture out of the reach of the sun or any artificial heat, because its valuable properties, for this purpose, would thereby be changed. It will be necessary also to observe that no more of the ingredients should be mixed than are wanted for present use; as the mixture will be greatly changed if kept for many hours. The stopping varnish that answers the purpose best, is made by dissolving the best Egyptian Asphaltum in the essential oil of turpentine, which dries sufficiently quick for all desirable purposes, and perfectly secures the part covered with it from the action of the menstruum.—*Tech. Rep.* vi. 134.

CHAPTER IV.

OF ENGRAVING.

THE tools necessary for engraving are, the oil-rubber, burnisher, scraper, oil-stone, needles, and ruler, already mentioned, as used in etching; also gravers, compasses, and a sand-bag.

Gravers are of two sorts, square and lozenge. Three of each sort should be provided. The first is used in cutting the broader strokes, the other for the fainter and more delicate. No graver should exceed the length of five inches and a half, the handle included, excepting for straight lines.

The sand-bag or cushion is used to lay the plate on, for the convenience of turning it about. The oil-stone must be of the Turkey sort.

OF WHETTING AND TEMPERING THE GRAVER.

As great pains are required to whet the graver nicely, particularly the belly of it, care must be taken to lay the two angles of the graver, which are to be held next the plate, flat upon the stone, and rub them steadily till they are polished like a mirror, and till the belly rises gradually above the plate, so as that, when you lay the graver flat upon it, you may just perceive the light under the point, otherwise it will dig into the copper, and it will be impossible to keep a point, or execute the work with freedom. In order to this, keep your right arm close to your side, and place the fore-finger of your left hand upon that part of the graver which lies uppermost on the stone. When this is done, in order to whet the face, place the flat part of the handle in the hollow of your hand, with the belly of the graver upwards, upon a moderate slope, and rub the extremity or face upon the stone, till it has an exceeding sharp point, which

you may try upon your thumb-nail. The oil-stone, while in use, must never be kept without oil.

When the graver is too hard, as is usually the case when first bought, and may be known by the frequent breaking of the point, the method of tempering the steel is as follows:—

Heat a poker red-hot, and hold the graver upon it within half an inch of the point, waving it to and fro till the steel changes to a light straw-colour; then put the point into oil to cool; or hold the graver close to the flame of a candle till it be of the same colour, and cool it in the tallow; but be careful either way not to hold it too long, for then it will be too soft; and in this case the point, which will then turn blue, must be broken off, and whetted afresh, and tempered again, if required. But be not too hasty in tempering, for sometimes a little whetting will bring it to a good condition.

OF HOLDING THE GRAVER.

Cut off that part of the handle which is upon the same line with the belly or sharp edge of the graver, making that side flat, that it may be no obstruction.

Hold the handle in the hollow of your hand, and extending your fore-finger down towards the point, let it rest upon the back of the graver, that you may hold it flat and parallel with the plate.

Take care that your fingers do not interpose between the plate and the graver, for they will prevent you from carrying the graver level with the plate, and from cutting your strokes so clean as they ought to be.

DIRECTIONS FOR ENGRAVING.

LET the table or board you work at be firm and steady; upon which place your sand-bag, with the plate upon it; and holding the graver as above directed, proceed to business in the following manner:—

For straight strokes, hold your plate firm upon the sand-bag with your left hand, moving your right hand

forwards, leaning lighter where the stroke should be fine, and harder where you would have it broader.

For circular or crooked strokes, hold the graver steadfast, moving the hand or the plate as you see convenient.

Learn to carry your hand with such a sleight, that you may end your stroke as finely as you began it; and, if you have occasion to make one part deeper or blacker than another, do it by degrees; and that you may do it with greater exactness, take care that your strokes be not too close nor too wide.

In the course of your work, scrape off the bur or roughness which arises, with the belly of your graver, but be careful in doing this, not to scratch the plate; and that you may see your work properly as you go on, rub it with the oil-rubber, and wipe the plate clean, which will take off the glare of the copper, and shew what you have done to the best advantage.

Any mistakes or scratches in the plate may be rubbed out with the burnisher, and the part levelled with the scraper, polishing it again afterwards lightly with the burnisher.

Having thus attained the use of the graver, according to the foregoing rules, you will be able to finish the piece you had etched, by graving up the several parts to the colour of the original, beginning, as in the etching, with the fainter parts, and advancing gradually with the stronger, till the whole is completed.

The dry needle (so called because not used till the ground is taken off the plate) is principally employed in the extreme light parts of water, sky, drapery, architecture, &c.

For your first practice, copy such prints as are openly shaded: the more finished ones being too difficult till you have gained farther experience.

Great choice of prints of every kind, fit for young beginners, may be had where this book is published.

N.B. To prevent any obstruction from too great a degree of light, we would recommend the use of a sash, made of transparent or fan-paper, pasted on a frame,

and placed sloping at a convenient distance between your work and the light. This will not only preserve the sight, but, when the sun shines, cannot possibly be dispensed with.

CHAPTER V.

OF METZOTINTO SCRAPING.

THIS art, which is of late date, is recommended to the practice of the ingenious reader, for the amazing ease with which it is executed, especially by those who have any notion of drawing.

Metzotinto prints are those which have no hatching or strokes of the graver, but whose lights and shades are blended together, and appear like a drawing of Indian ink.

The tools used in this art, after you have procured a well-polished copper-plate, are, oil-stone, grounding-tools, scrapers, burnishers, and needles.

DIRECTIONS FOR LAYING THE METZOTINTO GROUND.

MARK off upon the bottom of the plate the distance you intend to leave for the writing, coat of arms, &c. then laying your plate, with a piece of swanskin flannel under it, upon your table, hold the grounding-tool in your hand perpendicularly; lean upon it moderately hard, continually rocking your hand in a right line from end to end, till you have wholly covered the plate in one direction: next cross the strokes from side to side, afterwards from corner to corner, working the tool each time all over the plate, in every direction, almost like the points of a compass; taking all possible care not to let the tool cut (in one direction) twice in a place. This

done, the plate will be full, or, in other words, all rough alike, and would, if it were printed, appear completely black.

Having laid the ground, take the scrapings of black chalk, and with a piece of rag rub it over the plate; or you may, with two or three candles, smoke it, as before directed for etching.

Now take your print or drawing, and having rubbed the back with red-chalk-dust, mixed with white lake, proceed to trace it, as directed in page 25.

DIRECTIONS FOR WHETTING THE GROUNDING-TOOL.

If a tooth of the tool should break, it may be perceived in the working by the streak or gap, which will appear in the ground in a straight line; in which case the tool must be whetted on the back, holding it sloping, and in a circular manner, like the bottom of the tool.

! DIRECTIONS FOR SCRAPING THE PICTURE.

TAKE a blunt needle, and mark the outlines only; then with a scraper scrape off the lights in every part of the plate, as clean and smooth as possible, in proportion to the strength of the lights in your picture, taking care not to hurt your outlines: and that you may see the better what you do, with the thumb and fore-finger of the left-hand hold a piece of transparent paper, sloping, just over your right-hand, and you will soon be a judge of the different tints of the work you are doing; scraping off more or less of the ground, as the different strengths of lights and tints require.

The use of the burnisher is to soften and rub down the extreme light parts after the scraper is done with; such as the tip of the nose, forehead, linen, &c. which might otherwise, when proved, appear rather misty than clear.

Another method used by metzotinto scrapers is, to etch the outlines of the original, as also of the folds in drapery, marking the breadth of the shadows by dots, which having bit of a proper colour with aqua-fortis, ac-

cording to directions given in page 26, take off the ground used in etching, and, having laid the metzotinto ground as in page 32, proceed to scrape the plate as above.

Four or five days before you think the plates will be ready for proving, notice must be given to the rolling-press printer to wet some French paper, if to be got, otherwise a thick mellow paper in imitation of it, (but must not be wove, as no hard paper will do for this work,) as that time is necessary for it to lie in wet. When the proof is dry, touch it with white chalk where it should be lighter, and with black chalk where it should be darker; and when the print is re-touched, proceed as before for the lights, and for the shades use a small grounding-tool, as much as you judge necessary to bring it to the proper colour; and when you have done as much as you think expedient, prove it again, and so proceed to prove and touch till it is entirely to your mind. When the plate tarnishes in the part where you are at work, a little vinegar and salt, kept by you in a phial, will take it off, wiping it dry with a clean rag.

Avoid as much as possible over-scraping any part before the first proving, as, by this caution, the work will appear the more elegant.

CHAPTER VI.

OF PAINTING UPON GLASS.

PAINTING upon GLASS is an art which has generally appeared difficult; yet there is no representation can be more elegant than that of a metzotinto painted in this manner, for it gives all the softness that can be desired in a picture, and is easy to work, as there are no outlines

to draw, nor any shades to make, but the colours are put on without the trouble of either.

The prints are those done in metzotinto: for their shades being rubbed down on the glass, the several lines which represent the shady part of any common print are by this means blended together, and appear as soft and united as in any drawing of Indian ink.

Provide such metzotintos as you like; cut off the margin; then get a piece of fine crown glass, the size of your print, as flat and free from knots and scratches as possible; clean the glass, and lay some Venice turpentine, quite thin and smooth, on one side thereof, with a brush of hog's hair. Lay the print flat in water, and let it remain on the surface till it sinks, it is then enough: take it carefully out, and dab it between some papers, that no water may be seen, yet so as to be damp.

Next, lay the damp print with its face uppermost upon a flat table: then holding the glass over it, without touching the turpentine, till it is exactly even with the print, let it fall gently on it. Press the glass down carefully with your fingers in several parts, so that the turpentine may stick to the print; after which take it up; then holding the glass towards you, press the print with your fingers, from the centre towards the edges, till there are no blisters remaining.

When this is done, wet the back of your print with a sponge, till the paper will rub off with your fingers; then rub it gently, and the white paper will roll off, leaving the impression only upon the glass; then let it dry, and, with a camel's hair pencil, dipped in oil of turpentine, wet it all over, and it will be perfectly transparent, and fit for painting.

COLOURS PROPER FOR PAINTING UPON GLASS.

THE several sorts of colours, ground in oil for this purpose, and tied up in little bladders, may be had at all the capital colour-shops in London, &c.

Whites.

Flake White
Podium

Blacks.

Lamp-Black
Ivory-Black

Browns.

Spanish Brown
Umber
Spruce Oker
Dutch Pink
Orpiment

Blues.

Blue Bice
Prussian Blue

Reds.

Rose-Pink
Vermilion
Red-Lead
Indian Red
Lake Cinnabar

Yellows.

English Pink
Masticot
English Oker
Saunders Blue
Smalt

Greens.

Verdigris
Terra Vert
Verditer

The ultramarine for blue, and the carmine for red, are rather to be bought in powders, as in that case they are less apt to dry or be lost. And as the least touch of these will give the picture a cast, mix up what you want for present use with a drop or two of nut-oil upon your pallet with your pallet-knife.

The pallets and knives may be had at most of the colour-shops and ivory-turners.

To get the colour out of the bladders, prick a hole at the bottom of each, and press it till you have enough upon your pallet for present use, because the colours are apt to dry and skin over.

Then lay a sheet of white paper on the table, and taking the picture in your left hand, with the turpentine side next you, hold it sloping, (the bottom resting on the white paper,) and all the outlines and tints of the prints will be seen on the glass; and nothing remains but to lay on the colours proper for the different parts, as follow:

THE METHOD OF USING THE COLOURS.

As the lights and shades of your picture open, lay the lighter colours first on the lighter parts of your print, and the darker over the shaded parts: and having once laid on the brighter colours, it is not material if the darker sorts are laid a little over them; for the first colour will hide those laid on afterwards. As for example:—

Reds.—Lay on the first red-lead, and shade with lake or carmine.

Yellows.—The lightest yellow laid on first, may be shaded with Dutch-pink.

Blues.—Blue bice, or ultramarine, used for the lights, may be shaded with indigo.

Greens.—Lay on verdigris first, and then a mixture of that and Dutch pink. This green may be lightened by an addition of Dutch-pink.

When any of these colours are too strong, they may be lightened to any degree, by mixing white with them upon your pallet; or you may darken them as much as you please, by mixing them with a deeper shade of the same colour.

The colours must not be laid on too thick; but, if troublesome, thin them before you use them with a little turpentine oil.

Take care to have a pencil for each colour, and never use that which you have used for green with any other colour, without first washing it well with turpentine oil, as that colour is apt to appear predominant when the colours are dry.

Wash all the pencils, after using, in turpentine oil.

Your glass, when painted, must stand three or four days, free from dust, before it is framed.

All sorts of metzotinto and other prints proper for painting on glass, may be had at the place where this book is published.

CHAPTER VII.

OF PAINTING IN CRAYONS.

CRAYONS are to be had in boxes, every colour partitioned off separately, to prevent mixing.

The best formerly were those of Switzerland, but may now be had in England, of equal quality, at the shops of Mr. Scott, and Messrs. Reeve and Co. Strand; Mr. George Blackman, 362, Oxford-Street; Mr. Newman, Soho Square; Messrs. Reeve and Co. Holborn-bridge; and Mr. Jones, 103, Leadenhall-street, &c. &c.

The different colours are, white, black, yellow, orange, red, purple, blue, green, and brown; and each of these have their several shades, excepting the two first.

DIRECTIONS FOR USING THEM.

THE best papers used for this purpose are, blue and stone-colour, made for this purpose of silk rags, without folds, and very stout; because upon these the colours best distribute themselves. By this method, figures may be drawn in their proper colours, as they appear to the eye, because they may be matched with the crayons, and these, being dry, will not alter their colour; but, when wet, appear deeper than when dry, which is apt to deceive a young beginner.

Another way to make the necessary preparations is, to take some of the thickest and smoothest light blue or other paper, and get a straining-frame from a frame-maker's or carpenter's, on which strain some coarse Scotch or Irish cloth, drawing and fastening it with small tacks, round the edges, till it be quite smooth: after which, with a sponge and fair water, gently wet the blue paper, and then with a brush or rag paste the paper all over, and lay it carefully on the cloth, exactly

even with the straining-frame; after which take it up, and laying white paper on the table, place the blue paper downwards, with one hand keep the straining-frame steady, and with the other rub the cloth close to the paper; do this very carefully, and, taking it up, lay it on the table with the blue paper upwards, and a piece of paper under your hand, and rub it close to the straining-frame, without touching any other part; then let it stand to dry; after which set it on an easel, which may be had at the colour-shops, and proceed as follows:—

Make the first sketch, or rough draught, with charcoal; then with black, white, or red chalk, correct what you see amiss. The outline being thus completed, rub in your crayons according to their proper colours, and then with your finger, or fitch, soften and blend them together.

CHAPTER VIII.

OF PAINTING IN WATER-COLOURS.

THE materials necessary for this art are, gum colours, hair pencils, fitches, a pallet, and pen-knife.

The colours in general are, white, black, brown, red, yellow, blue, and green.

The various kinds are as follow:—

Whites.

Flake White
Spanish White
White Lead

Blacks.

Burnt Cherry-Stones
Ivory-Black
Lamp-Black

Yellows.

English Oker
Gall-Stone
Gamboge
Masticot, dark and light
Oker de Luce
Orpiment [light
Pink-Yellow, dark and
Roman Oker
Saffron

Browns.

Spanish Brown
Spanish Liquorice
Umber

Reds.

Burnt Oker
Carmine
Cinnabar Lake
Indian Lake
Indian Red
Red Ink
Red Lead
Vermilion

Blues.

Blue Bice
Blue Verditer
Indigo
Smalt
Ultramarine

Greens.

Green Bice
Green Pink
Sap Green
Verdigris
Verditer

All the colours and hair-pencils may be had at the shops before mentioned, either in cakes, shells, or powders. If you use the latter, provide a grindstone and muller from any stone-cutter's, to prepare them for use.

DIRECTIONS FOR MAKING THE FOLLOWING MIXED COLOURS.

Ash Colour.—White and lamp-black, or Indigo and black; or cherry-stone and white, shaded with ivory-black.

Bay Colour.—Vermilion, with a little Spanish brown and black.

Bright Red.—Indian lake and native cinnabar.

Carnation.—Lake and White, shaded with lake.

Changeable Silk.—Red-lead and water of masticot, shaded with sap-green.

Cloud Colour.—White; light masticot; or lake and white, shaded with blue verditer; or blue verditer alone.

Crimson.—Cinnabar-lake and white, shaded with lake.

Flame Colour.—Vermilion and orpiment; or red-lead and masticot, heightened with white.

Flesh Colour.—White with a little lake, and red-lead; and yellow oker for a swarthy complexion.

French Green.—Light pink and Dutch bice, shaded with green pink.

Glass Grey.—Ceruse, with a little blue of any kind.

Hair Colour.—Masticot, umber, yellow oker, ceruse, oker de luce, and cherry-stone black.

Lead Colour.—Indigo and white.

Light Blue.—Blue bice, heightened with ceruse or spodium.

Light Green.—Pink and smalt, with white, if need require.

Lion Tawney.—Red-lead and masticot, shaded with umber.

Murry.—Cinnabar, lake, and white lead.

Orange.—Red-lead and a little fine masticot, shaded with gall-stone and lake.

Orange Tawney.—Cinnabar, light pink, and a little masticot, shaded with gall-stone and lake.

Pearl Colour.—Carmine, with a little white, shaded with lake.

Popingay Green.—Green and masticot; or pink and a little indigo, shaded with indigo.

Purple.—Indigo, Spanish brown, and white; or blue bice, with red and white lead; or blue bice and lake.

Russet.—Cherry-stone black, and white.

Scarlet.—Red-lead and lake, with or without vermilion; or carmine and Indian lake; or native cinnabar and red-lead, shaded with Indian lake.

Sea Green.—Bice, pink, and white, shaded with green pink.

Sky Colour.—Light masticot and light, for the lowest and lightest parts; red ink and white for the next; blue bice and white for a third degree; and blue bice alone for the highest part of all. These are to be all softened into one another at the edges, so as not to appear harsh.

Sky Colour for Drapery.—Blue bice and Venice ceruse; or ultramarine and white, shaded with indigo.

Straw Colour.—Yellow masticot, and a very little cinnabar, shaded with dark pink.

Violet Colour.—Indigo, white, and cinnabar lake; or

fine Dutch bice and lake, shaded with indigo; or litmose, smalt, and blue bice; the latter most predominant.

Water.—Blue and white shaded with blue, and heightened with white.

DIRECTIONS FOR USING THE COLOURS.

YOUR pencils must be fast in their quills, and sharp-pointed after you have drawn them through your mouth.

Before you begin, have all your colours ready before you, and a pallet for the conveniency of mixing them; a paper to lay under your hand, and to keep your work clean, as well as to dry your colours upon; also a large brush called a fitch, to wipe off the dust when your colours are dry.

Lay your colours on but thinly at first, deepening and mellowing them by degrees, as you see occasion. The quicker you lay them on, the evener and cleaner your drawing will appear.

Take care to preserve all your colours from dust; and before you use them, wipe your shells and pallet every time with a fitch.

For face-painting, mix up a little light carnation or flesh-colour with gum-water, in a shell by itself. If it be for a fair complexion, mix vermilion and flake-white together; and for a swarthy one, add to the former a little masticot or English oker, or both.

Let your flesh-colour be always lighter than the complexion you would paint, for by working on it you may bring it to its true colour.

In a large shell, or upon your pallet, lay your different shades of flesh-colour, at a convenient distance from each other, and always have ready a sufficient quantity of white to lighten your shadows.

For the cheeks and lips use a mixture of lake and red-lead, or carmine, as occasion requires; and for blue tints, (as under the eyes, and in veins,) indigo, or ultramarine, and white.

For grey faint shadows use white, English oker, sometimes masticot; for deep shadows, white English oker, umber; for darker shadows, lake and pink, which make a good fleshy shadow.

In colouring landscapes, at first lay only dead colours smooth all over the piece, leaving no part uncovered, and be not over-curious in this part of the performance, but rather use a masterly freedom; and the work, though seemingly rough to the eye, will have a good effect when placed at a distance.

Let not the roughness of the colour discourage you, for it is easily to be softened by degrees with the other shadows, observing only to sweeten and heighten them according as the light falls.

In some places lay on strong touches, and in those places bring your work up together to an equal roundness and strength; tempering and sweetening your colours with a sharper pencil than the first, that no lumps or harsh edges be left, but that all your shadows may lie dispersed, soft, and smooth, gliding gently, as it were, one in another.

You are not to finish any part before the other, but work up all the parts gradually alike till you see nothing wanting to complete your picture.

Having laid your dead colours, begin first with the lightest parts, as the sky, sun-beams, &c. then the yellowish beams; (which are to be done with masticot and white;) next the blueness of the sky, with ultramarine or smalt alone. For purple clouds only mix lake and white, making your colours deeper as they go upwards from the horizon, except in tempestuous skies. The tops of distant mountains must be worked so faint, that they may seem to lose themselves in air.

Bring your colours forward as your distance decreases; painting your first ground next the horizon downwards of a bluish sea-green, and as you advance forwards, of a reddish or darker green, till you come to the fore-ground itself, which, as it is to be the darkest part of all, do with dark green, shaded with a dark

brown or yellow; which rule of shadow will also serve for the trees on each respective ground.

All distant objects are to be made imperfect as they appear to the eye, as has been already observed under the article of *Light and Shade*.

In colouring trees, boughs, and branches, touch in all the dark shades first, raising the lighter leaves above the darker, by adding masticot to the dark green, which may be made with bice, pink, and indigo; for the uppermost of all, which are to be done last, touch lightly the extremities of the leaves with a little green, masticot, and white, and set off the darkest shadows with sap-green and indigo.

These rules are adapted to general appearances; but the learner may deviate from them as nature shall dictate.

With regard to drapery, fruit, flowers, and other branches of painting, the best observations are to be taken from the objects themselves, or the most curious and exact representations of them.

RECEIPTS FOR THOSE WHO PAINT IN WATER-COLOURS.

To make Gum-Water.

Dissolve one ounce of pure white gum-arabic, and half an ounce of double-refined sugar, in a quart of spring water; strain it through a fine sieve, or a piece of muslin, and bottle it off for use, keeping it free from dust.

Another Way.

Take some gum-arabic of the whitest sort, bruise it and tie it up in a woollen cloth, and steep it in spring-water in a glass or earthen vessel, till it be dissolved. If it be too stiff, add more water; and, if too thin, more gum.

With this water you may temper most of your colours; using such a quantity that, being touched when dry, the colour will not come off. If the colour shine, there is too much gum in it.

To keep the Flies from your Work.

When you have made your gum-water according to either of the foregoing directions, add thereto a little coloquintida, which will preserve your work, when exposed, from being spoiled by the flies.

To make Liquid Gold for Vellum-Painting, Fans, &c.

Grind the finest leaf-gold with strong gum-water, very fine, adding, as you grind it, more gum-water, as you see necessary. When you have ground it as fine as you can, wash it in a large shell; then temper it with a little mercury sublimate, bind it in the shell with a little dissolved gum, shake and spread it equally all over the shell, and use it with fair water only.

To make Liquid Silver for the same Purpose.

The process for this is the same with that of liquid gold, only observing in the using it to temper it with glare of eggs instead of water.

To prepare the Glare of Eggs.

Take the whites, and beat them with a spoon till they rise all in a foam; let them stand all night, and they will be clarified into good glare.

To recover Liquid Silver that has contracted Rust.

If your silver, by length of time or damp weather, become rusty, cover that part of your work with juice of garlick, which will effectually recover it.

To keep the Colours from sinking.

Boil four ounces of roche-alum in a pint of spring-water, till it is thoroughly dissolved; then filter it through brown paper, and keep it for use.

Before you lay on your colours, take a sponge, and wet the back of your paper with this water while it is hot. This will not only prevent the colours from sinking, but will likewise give them an additional beauty and lustre, and preserve time from fading. If your paper is not good, it must be washed three or four times with this water, drying it every time.

If your prints are to be varnished, wash them all over with white starch, before you begin to lay on your colours.

To make Size for painting Scenes, and other Candle-Light Pieces.

Steep a quarter of a pound of the cuttings of white glove-leather in water for some time; then take them out, and boil them in three quarts of water till it wastes to a pint, strain it through a cloth into an earthen pan. When the size is cold, if it feels firm under your hand, it is strong enough. You may prepare any colours in this size while it is warm, and it will take off the glare which would appear upon them by candle-light, if mixed with gum-water.

To recover Colours when decayed.

Take rosemary-water, double-distilled, or pure spirit of rosemary, and with a few drops of it temper your colours, which, however dead and faded, will recover their bloom and brilliance.

This water or spirit will prevent the bubbles in white and umber, which are troublesome in grinding.

PINK.

THE single pink does not admit of so great a variety as the carnation; but is, nevertheless, so variegated as to make it an agreeable flower for satins, silks, &c. The

most common are either white or crimson; others are striped white and red; others are white, spotted with red; others edged with red; all of which may be worked according to the rules for the other flowers so diversified with the same colours. The leaves and stalk are bluish green; only at the joints there is, for the most part, a yellowish tinge, which is also at the bottom of the cup and scales.

CHAPTER IX.

OF PAINTING ON SILKS, SATINS, &c.

WHEN the outline is made according to the artist's fancy, a wash of isinglass should with care be laid on, to take away the glare and sleekiness of the satin; otherwise the colours will not work freely. The isinglass to be melted in very clear water, over the fire, so as not to be very glutinous; otherwise it will discolour the satin, and consequently spoil the colours.

In the foregoing rules we have recommended, for the most part, the leaving the paper for the light parts of a flower, and working with colours mostly transparent; but here the lights are to be made by a small tincture of the colour of the intended flower, mixed with the flake white, so much as just to make a degree from the colour of the satin; if white, or of any other colour, to be mixed proportionably to the colour of the flower. For instance, if a blue flower, the bice or verditer, a very small quantity of it with the white, using less of it proportionally as the shades grow darker; and in the most dark, indigo alone may be used, it being by that time rendered opaque enough; but great care must be used not to lay the colours on too thick, otherwise they will crack. A little white sugar-candy will be found necessary, when mixed with the gum-water, as a pre-

ventative to that great inconveniency. If a flower happens to be of so deep a colour as not to admit of any pure white in the lightest of the parts, a sort of priming of white should be laid on; after which, when dry, begin with the ground-colour of the flower, proceeding gradually with the shades, as in the above directions, which, with the selected examples we have annexed, peculiarly chosen from nature for that purpose, we hope will be sufficient for our ingenious students in this most delightful amusement.

A SIMPLE METHOD OF DISCHARGING STAINS FROM ENGRAVINGS.

Put the Engraving on a smooth board, cover it thinly with common salt finely pounded; pour, or squeeze lemon-juice upon the salt, so as to dissolve a considerable portion of it; elevate one end of the board, so that it may form an angle of about forty-five or fifty degrees with the horizon. Pour on the engraving boiling water from a tea-kettle, until the salt and lemon juice be all washed off; the engraving will then be perfectly clean, and free from stains. It must be dried on the board, or on some smooth surface gradually. If dried by the fire or the sun, it will be tinged with a yellow colour. Any one may satisfy himself of the perfect efficacy of this method, by trying it on an engraving of small value.—*London Mechanic's Register*, 1824.

FINIS.



Special

84-B

4987

THE GETTY CENTER
LIBRARY

Bound with:

84-B 4988

84-B 4994

84-B 4998

84-B 5003

84-B 5011

84-B 5013

THE GETTY CENTER
LIBRARY

